Technical datasheet - Extruded products
Alloy EN AW-6101B [EAlMgSi(B)]

Alloy 6101B is a medium strength alloy which is specifically dedicated to applications where a high conductivity is required.

Typical Applications
- Electrical busbar
- Heatsinks

Chemical Composition ¹

<table>
<thead>
<tr>
<th>Element</th>
<th>Si</th>
<th>Fe</th>
<th>Cu</th>
<th>Mn</th>
<th>Mg</th>
<th>Cr</th>
<th>Zn</th>
<th>Ti</th>
<th>Pb</th>
<th>Bi</th>
<th>Sn</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>0.30</td>
<td>0.10</td>
<td>0.05</td>
<td>0.05</td>
<td>0.35</td>
<td>0.10</td>
<td>0.10</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Max</td>
<td>0.60</td>
<td>0.30</td>
<td>0.30</td>
<td>0.45</td>
<td>0.60</td>
<td>0.30</td>
<td>0.60</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
</tbody>
</table>

¹ Chemical composition in weight-% according to EN-573-3:2013

Mechanical Properties ²,³

<table>
<thead>
<tr>
<th>Temper</th>
<th>Wall thickness t [mm]</th>
<th>( R_{0.2} ) [MPa]</th>
<th>( R_m ) [MPa]</th>
<th>A [%]</th>
<th>( A_{90mm} ) [%]</th>
<th>HBW ⁶ TYPICAL VALUE</th>
<th>Vickers ⁶ TYPICAL VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6⁵⁺ᵇ</td>
<td>t ≤ 15</td>
<td>160</td>
<td>215</td>
<td>8</td>
<td>6</td>
<td>70</td>
<td>80</td>
</tr>
<tr>
<td>T7⁵⁺ᶜ</td>
<td>t ≤ 15</td>
<td>120</td>
<td>170</td>
<td>12</td>
<td>10</td>
<td>60</td>
<td>68</td>
</tr>
</tbody>
</table>

² Properties according to EN 755-2:2016 for extruded profile, minimum values unless else specified
³ If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile section
⁴ Temper designations according to EN 515:1993
⁵ Temper designations according to EN 755-2:2016 for extruded profile, minimum values unless else specified
⁶ Electrical conductivity ≥ 30 MS/m
⁷ Electrical conductivity ≥ 32 MS/m
² Brinell hardness values for information only. Vickers converted from Brinell value and should be considered approximate

Temper Designations ⁴

- T4: Solution heat treated and naturally aged
- T5: Cooled from an elevated temperature shaping process and then artificially aged
- T6: Solution heat treated and then artificially aged
- T64: Solution heat treated and then artificially aged in underaging conditions (between T6 and T61) to improve formability
- T66: Solution heat treated and then artificially aged – mechanical property level higher than T6 achieved through special control of the process
- T7: Solution heat treated and then artificially overaged

Physical Properties ⁵

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>70</td>
<td>26</td>
<td>590 - 650</td>
<td>2.70</td>
<td>218</td>
<td>901</td>
<td>30</td>
<td>33.3</td>
</tr>
</tbody>
</table>

⁵ Reference: MNC Handbok nr 12, version 2, SIS, 1989. Typical properties at room temperature 20°C
Conductivity Ageing Response

Conductivity can be increased further but on the cost of mechanical strength, see chart for typical relationship between hardness and electrical conductivity when over-ageing. Provided for informational purposes only, not to be considered as guaranteed properties. Results are valid for the investigated specimens taken from a specific sample.

6101B - Conductivity and Hardness - Ageing Response

[Graph showing the relationship between hardness and electrical conductivity over ageing time at 230°C]